

### **Abstract of the Disclosure**

In the LU decomposition of a matrix composed of blocks, the blocks to be updated of the matrix are  
5 vertically divided in each SMP node connected through  
a network and each of the divided blocks is allocated  
to each node. This process is also repeatedly applied  
to new blocks to be updated later, and the newly divided  
blocks are also cyclically allocated to each node. Each  
10 node updates allocated divided blocks in the original  
order of blocks. Since by sequentially updating blocks,  
the amount of processed blocks of each node equally  
increases, load can be equally distributed.